

ADDENDUM TO THE FACT SHEET
FOR NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM (NPDES)
PERMIT NO. WA0037214

I. GENERAL INFORMATION

Facility: North End Wastewater Treatment Plant No. 3
2201 Portland Avenue
Tacoma, WA 98421-2711

II. APPLICATION REVIEW

The city of Tacoma submitted an application to Ecology on October 15, 2007 and on March 12, 2008, for permit reissuance, and the Department of Ecology (Ecology) accepted it on April 16, 2008. Ecology has sufficiently reviewed the application, discharge monitoring reports, and other facility information in enough detail to ensure that:

- The city of Tacoma has complied with all of the terms, conditions, requirements and schedules of compliance of the expired permit.
- Ecology has up-to date information on the North End Wastewater Treatment Plant No. 3 waste treatment practices, and the nature, content, volume, and frequency of its discharge.
- The discharge meets applicable effluent standards and limits, water quality standards, and other legally applicable requirements.

III. PERMIT REAUTHORIZATION

When Ecology reauthorizes a discharge permit it essentially reissues the permit with the existing limits, terms and conditions. Alternatively, when Ecology renews a permit it re-evaluates the impact of the discharge on the receiving water which may lead to changes in the limits, terms and conditions of the permit.

This fact sheet addendum accompanies the permit, which Ecology proposes to reauthorize for the discharge of wastewater to Outer Commencement Bay. The previous fact sheet explains the basis for the discharge limitations and conditions of the reauthorized permit and remains as part of the administrative record.

Ecology determined it does not need to change the existing permit requirements, including discharge limits and monitoring, to protect receiving water quality. Ecology did change the effluent fecal coliform limit as discussed later in this document.

The previous fact sheet addressed conditions and issues at the facility at the time when Ecology issued the previous permit in 2003. Since the issuance of the current permit, Ecology has not received any additional information which indicates that environmental impacts from the discharge warrant a complete renewal of the permit. The reauthorized permit is virtually identical to the previous permit issued on November 7, 2003.

Ecology reviewed inspections and assessed compliance of the North End Wastewater Treatment Plant No. 3 discharge with the terms and conditions in the previous permit and determined that it should not rank the facility as a high priority for permit renewal. Ecology assigns a high priority for permit renewals in situations where water quality would benefit from a more stringent permit during the next five-year cycle or when there has been a substantial change to the facility.

The permit reauthorization process, along with the renewal of high priority permits, allows Ecology to reissue permits in a timely manner and minimize the number of active permits that have passed their expiration dates.

A. Fecal Coliform Effluent Limit

In 2003, during permit development, Ecology determined that there was a reasonable potential for the discharge to violate water quality criteria for fecal coliform at the edge of the mixing zone, assuming discharges at the technology-based limit, and using background water quality data from monitoring station CMB003 in Outer Commencement Bay, some distance from the discharge location.

Ecology placed a performance-based effluent limit (monthly average of 48 cfu/100 mL and weekly average of 64 cfu/100 mL) in lieu of the technology-based effluent limit (monthly average of 200 cfu/100 mL and weekly average of 400 cfu/100 mL) in the permit.

At the same time, Ecology acknowledged that it was possible that the ambient monitoring station did not closely represent the conditions in the vicinity of the North End Wastewater Treatment Plant outfall. Ecology gave the city of Tacoma the option of performing a receiving water study to show that there was sufficient assimilative capacity in the vicinity of the outfall for the technology-based limits for fecal coliform to be protective of water quality standards.

In June 2004, the city of Tacoma undertook a year-long receiving water study to determine if using the technology-based limits and the ambient conditions around the North End Wastewater Treatment Plant outfall would protect the water quality standards. The results of the Commencement Bay Fecal Coliform Study, prepared by Cosmopolitan Engineering Group, August 2005, showed that the technology-based limits for fecal coliform will protect the water quality.

Therefore, Ecology replaced the performance-based permit limits of 48 cfu/100 mL as a monthly average and 64 cfu/100 mL as a weekly average with the technology-based limits of 200 cfu/100 mL as a monthly average and 400 cfu/100 mL as a weekly average for fecal coliform.

B. Facility Loading

The City has exceeded its design capacity and will prepare Preliminary and Final Re-Rating Study Engineering Reports to assess the treatment plant's capacity and examine improvements to increase that capacity. As part of this permit re-authorization, Ecology examined the city of Tacoma's influent and effluent data to estimate what pollutant loadings the City might continue to accept during the study period and still meet existing effluent limits. Based upon our data review, we believe that the City can safely accept and study loadings (BOD and TSS) higher than its rated capacity. As a result, in this permit re-authorization, we have authorized the City to accept the following loadings:

- BOD: 10,600 lbs/day (20 percent higher than the approved design capacity); and
- TSS: 12,000 lbs/day (5 percent higher than the approved design capacity).

C. Temperature

As part of the review of the permit and the implementation of new temperature standards, and using conservative estimates of the effluent and receiving water temperatures, Ecology determined that the discharge does not have the potential to violate temperature standards in the receiving water. As a result, Ecology is not requiring monitoring for temperature (see Appendix A for Temperature Analysis).

Ecology carried over the other discharge limits and conditions in effect at the time of expiration of the previous permit to this reauthorized permit. In addition, Ecology changed the submittal dates for reports from those in the previous permit. Ecology removed the completed report requirements that do not require additional or continued assessment. It adjusted the dates for the other standard compliance and submittal requirements that it carried over from the past permit into this reauthorized permit. Ecology considered these reports necessary in the previous permit and no information has come forward to cause it to reconsider.

Ecology must public notice the availability of the draft reauthorized permit at least 30 days before it reissues the permit [Washington Administrative Code (WAC) 173-220-050]. Ecology invites you to review and comment on its decision to reauthorize the permit (see Appendix B-Public Involvement for more detail on the Public Notice procedures).

After the public comment period has closed, Ecology will prepare a response to comments document that it will attach to this fact sheet addendum. The response to comments will include the resultant changes to the permit and either addresses each comment individually or summarizes the substantive comments and respond. Ecology sends a copy of the response to comments to all parties who submitted comments. Ecology will include the response to comments in this fact sheet addendum.

IV. RECOMMENDATION FOR PERMIT ISSUANCE

Ecology proposes to reissue this permit for five years.

APPENDIX A – TEMPERATURE ANALYSIS

Marine T-mix

T-Mix is based on WAC 173-201A-200(1)(c)(i)–(ii) and Water Quality Program Guidance.

All Data inputs must meet WQ guidelines.

The Water Quality temperature guidance document may be found at:

<http://www.ecy.wa.gov/biblio/0610100.html>

Notes: Tacoma North End WWTP

| INPUT | May-Sep | Oct-Apr |
|--|----------|----------|
| 1. Chronic Dilution Factor at Mixing Zone Boundary | 52 | 52 |
| 2. Annual max 1DADMax Ambient Temperature (Background 90th percentile) | 13.2 °C | 13.2 °C |
| 3. 1DADMax Effluent Temperature (95th percentile) | 24.0 °C | 24.0 °C |
| 4. Aquatic Life Temperature WQ Criterion | 16.0 °C | 16.0 °C |
| OUTPUT | | |
| 5. Temperature at Chronic Mixing Zone Boundary: | 13.41 °C | 13.41 °C |
| 6. Incremental Temperature Increase or decrease: | 0.21 °C | 0.21 °C |
| 7. Incremental Temperature Increase $12/(T-2)$ if $T \leq \text{crit}$: | 1.07 °C | 1.07 °C |
| 8. Maximum Allowable Temperature at Mixing Zone Boundary: | 14.27 °C | 14.27 °C |
| A. If ambient temp is warmer than WQ criterion | | |
| 9. Does temp fall within this warmer temp range? | NO | NO |
| 10. Temp increase allowed at mixing zone boundary, if required: | --- | --- |
| B. If ambient temp is cooler than WQ criterion but within $12/(T_{\text{amb}}-2)$ and within 0.3 °C of the criterion | | |
| 11. Does temp fall within this incremental temp. range? | NO | NO |
| 12. Temp increase allowed at mixing zone boundary, if required: | --- | --- |
| C. If ambient temp is cooler than (WQ criterion-0.3) but within $12/(T_{\text{amb}}-2)$ of the criterion | | |
| 13. Does temp fall within this Incremental temp. range? | NO | NO |
| 14. Temp increase allowed at mixing zone boundary, if required: | --- | --- |
| D. If ambient temp is cooler than (WQ criterion - $12/(T_{\text{amb}}-2)$) | | |
| 15. Does temp fall within this Incremental temp. range? | YES | YES |
| 16. Temp increase allowed at mixing zone boundary, if required: | NO LIMIT | NO LIMIT |
| 17. Do any of the above cells show a temp increase? | NO | NO |
| 18. Temperature Limit if Required? | NO LIMIT | NO LIMIT |

APPENDIX B--PUBLIC INVOLVEMENT INFORMATION

Ecology proposes to reissue a permit to North End Wastewater Treatment Plant No. 3. The permit includes wastewater discharge limits and other conditions. This fact sheet addendum describes the facility and Ecology's reasons for reauthorizing the permit conditions.

Ecology placed a Public Notice of Application on June 9, 2008, and June 16, 2008, in the *Tacoma News Tribune* to inform the public about the submitted application and to invite comment on the reissuance of this permit.

Ecology will place a Public Notice of Draft on February 17, 2009, in the *Tacoma News Tribune* to inform the public and to invite comment on the proposed draft National Pollutant Discharge Elimination System permit and fact sheet addendum.

The Notice –

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, before the end of the Comment Period.
- Tells how to request a public hearing of comments about the proposed NPDES Permit.
- Explains the next step(s) in the permitting process.

Ecology has published a document entitled **Frequently Asked Questions about Effective Public Commenting** which is available on our website at <http://www.ecy.wa.gov/biblio/0307023.html>.

You may obtain further information from Ecology by telephone at 360-407-6279, or by writing to the permit writer at the address listed below.

Carey Cholski
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

The primary author of this permit and fact sheet is Mahbub Alam.

APPENDIX C - RESPONSE TO COMMENTS

Ecology received comments from the city of Tacoma and Citizens for a Healthy Bay during public comment period. Ecology addressed the comments below separately.

Comments from the City of Tacoma:

Comments on the Draft Permit:

Comment 1:

Page 4 of 38, Section S4.B: New requirement for Re-Rating Study Report, date of submittal is acceptable. Please change “Provisional” to “Preliminary.”

Response 1:

Ecology changed “Provisional” to “Preliminary” in the permit.

Comment 2:

Page 4 of 38, Section S4.B: New requirement for Re-Rating Study Engineering Report, date of submittal is acceptable.

Response 2:

Ecology noted the comment. We did not make any changes to the permit due to this comment.

Comment 3:

Page 4 of 38, Section S4.E: Our reports have traditionally been due on 15 March rather than May. Also suggest that since this permit is not yet in effect, the first submittal date should be due in 2010 rather than 2009, and please clarify which month, March or May.

Response 3:

The previous permit for Tacoma North End Treatment Plant (NETP) required the above mentioned submittal annually on May 15. Ecology changed the first submittal date from May 15 to March 15 per the Permittee’s request. First year of submittal is changed from “2009” to “2010.”

Comment 4:

Page 4 of 38, Section S4.F: Same comment as above on month and year of first submittal.

Response 4:

See the response above (comment #3).

Comment 5:

Page 6 of 38, Section S1.A: How were the pounds of BOD and TSS calculated? Why, if they are both 30 mg/L concentrations, do we have differing quantities?

Response 5:

The pounds of BOD and TSS are from the previous permit. Ecology calculated these pounds based on 85 percent removal of design influent loading capacity (8,882 lbs/day BOD and 11,366 lbs/day TSS). These loadings were not based on 30 mg/L concentrations because 85 percent removal was the limiting consideration. See the fact sheet of the previous permit (page 10) for details. This permit is a reauthorized permit and the previous fact sheet is part of the administrative record.

Ecology did not make any changes to the permit due to this comment.

Comment 6:

Page 6 of 38, Section S1.A: Fecal limits changed as agreed, back to 200/400. The City concurs with this change.

Response 6:

Ecology noted the comment. We did not make any changes to the permit due to this comment.

Comment 7:

Page 6 of 38, Section S1.A: Whole effluent Toxicity should be removed due to the plant's history of not demonstrating toxicity in testing. See additional comments in Sections S8 and S9.

Response 7:

Ecology did not remove the requirements of Whole Effluent Toxicity (WET) from the permit. Based on effluent characterization and compliance monitoring during the previous permit cycle, the Permittee failed to meet performance standards for both acute and chronic toxicity. See response to additional comments (No. 38 and 39) for details.

Ecology did not make any changes to the permit due to this comment.

Comment 8:

Page 7 of 38, Section S1.B: This section has been significantly changed, and there no explanation of the changes in the Amended Fact Sheet. Could Ecology explain and clarify these changes from the existing permit? What is the actual size of the entire mixing zone(s)?

Response 8:

Ecology clarified the size of the mixing zone based on the outfall description provided in the 1994 Engineering Report for the NETP Improvements.¹ The previous permit specified a diffuser length of 300 feet which is an error.

The chronic mixing zone is a cylinder around each discharge port (325 feet radius and 125 feet depth) rising from seabed. Given that there are six discharge ports with a total diffuser length of 32 feet, the mixing zone closely resembles an elliptical shape in plain view. The length of the shape is 682 feet ($= 325 + 32 + 325$) and width is 650 feet ($= 325 + 325$). The acute mixing zone is 10 percent of the chronic mixing zone for each discharge port (length $= 32.5 + 32 + 32.5 = 97$ feet; width $= 32.5 + 32.5 = 65$ feet). See Figure 1 for a plan view of mixing zone boundary.

Ecology did not change any dilution factors (see the original fact sheet). We specified the dilution factors in the permit for clarity.

Ecology did not make any changes to the permit due to this comment.

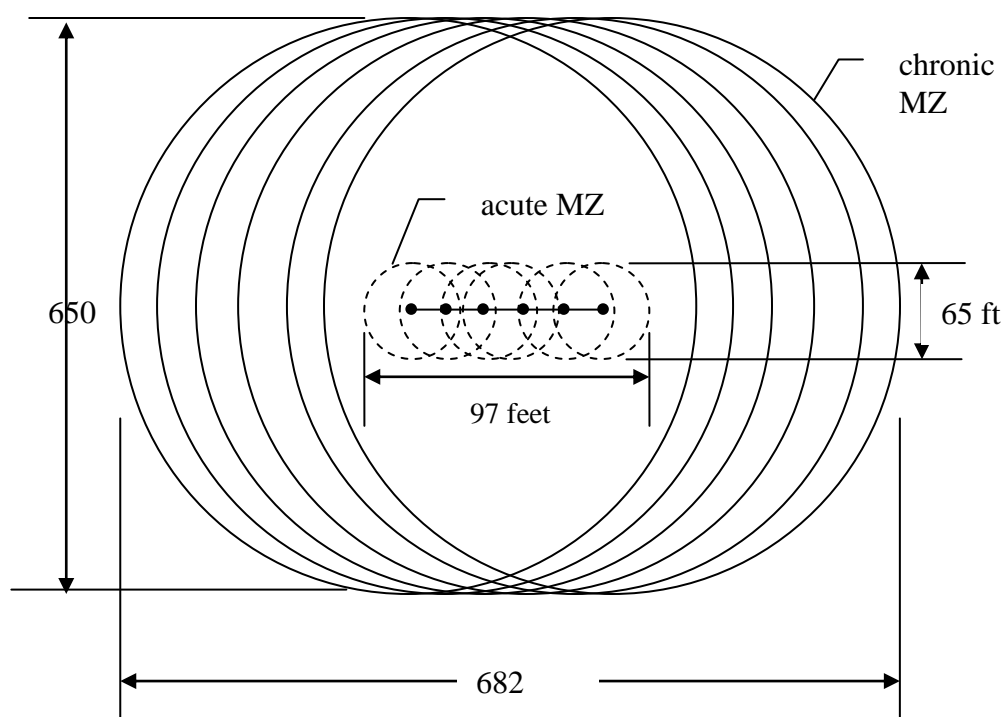


Figure 1. Acute and chronic mixing zone boundary for Tacoma North End Treatment Plant outfall (not to scale)

¹ Parametrix, Inc. 1994. North End Wastewater Treatment Plant Improvements. City of Tacoma, Washington Engineering Report. Publication No. PMX #21-1564-09.

Comment 9:

Page 8 of 38, Section S2.A: New influent testing required for Total Ammonia, Nitrate+Nitrite nitrogen, Total Nitrogen, Ortho-Phosphate, and Total Phosphorus. NETP lab is not equipped nor accredited to perform this testing. Samples will have to be collected and transported to CTP Environmental Lab for testing. The Amended Fact Sheet provided makes no reference as to why this extensive testing was added. What is the regulatory requirement for this additional testing?

Response 9:

Ecology is requiring nutrient (both nitrogen and phosphorus) monitoring for all municipal wastewater treatment plants discharging to Puget Sound or freshwaters that drain to Puget Sound. Excess nutrients may lead to low levels of dissolved oxygen in the Sound that can lead to fish kills. The objective of this monitoring is to characterize nutrient loading into and from the treatment plants. In addition, this monitoring will provide data that Ecology will use in its ongoing study of the affects of nutrients on dissolved oxygen in Puget Sound. For more information on Ecology's Puget Sound efforts, see:

http://www.ecy.wa.gov/puget_sound/dissolved_oxygen_study.html.

Ecology did not make any changes to the permit due to this comment.

Comment 10:

Page 9 of 38, Section S2.A: New effluent testing requirements for nutrients same as for the influent. Same comments apply to effluent. Also, typo in the sample point description; says "Influent" should be "Effluent."

Response 10:

See the response above.

Ecology changed the sample point description from "Influent" to "Final Effluent."

Comment 11:

Page 9 of 38, Section S2.A: Pretreatment monitoring for pH can't be on 24-hour composite, needs to be stated as being a grab sample.

Response 11:

The permit requires daily pH monitoring of influent and effluent. Therefore, it is not necessary to separately monitor pH during pretreatment testing. Ecology removed "pH" from pretreatment monitoring.

Comment 12:

Page 10 of 38, Section S2.A: Footnote "b" remains, although the temperature monitoring requirements have been dropped (see Amended Fact Sheet). This should be deleted for clarity and the remaining footnotes renumbered accordingly.

Response 12:

Ecology removed the footnote “b” and renumbered the remaining footnotes.

Comment 13:

Page 10 of 38, Section S2.A: Footnote “d” has added reporting requirements and report submittals added to specified monthly DMRs. The report required with the December DMR is currently due as a separate report by 15 March each year. Why have the quarterly reports been added to the DMR, after Ecology just at the end of 2008 defined for the City a system of reporting based upon requirements for reports X days/months after samples are taken?

Response 13:

Ecology deleted the additional language regarding report submittals added to specific monthly DMRs in footnote “d”.

Comment 14:

Page 10 of 38, Section S2.B: 2nd paragraph cites using “latest” revision of Standard Methods. When SM gets revised it is usually released long before it goes through the approval process. This should be revised to read “...latest approved revision”

Response 14:

Ecology added the word “approved” in the permit language.

Comment 15:

Page 11 of 38, Section S3.A: Fourth paragraph describes a report submitted to EPA (form 3320-1). We believe that those reports are no longer required (dropped some years ago).

Response 15:

Ecology removed the requirement from the permit.

Comment 16:

Page 12 of 38, Section S3.E: Significant modification of this section. These three pages are confusing, and there is no explanation for the changes in the Amended Fact Sheet. S3.E.2.d. requires reporting on exceedances of instantaneous maximum discharge limits; our limits are weekly/monthly save for pH and chlorine residual. While these limits have not been violated for over 11 years, the current method of reporting would be flagging the incident in the monthly DMR. Why is this now required within 24 hours?

Response 16:

This section is part of the new permit language that Ecology is including in all newly re-issued permits, to clarify reporting requirements. The old permit language led one discharger to believe that it was not necessary to report an overflow from the collection system. In that instance, the

overflow resulted in a shellfish closure and the discharger should have reported the spill immediately to the Department of Health.

Ecology did not make any changes to the permit due to this comment.

Comment 17:

Page 14 of 38, Section S3.F: Oil spill reporting? Does this belong in the Pretreatment Section of the permit?

Response 17:

This section is part of the new permit language that Ecology is including in all newly re-issued permits, to clarify reporting requirements.

Ecology did not make any changes to the permit due to this comment.

Comment 18:

Page 14 of 38, Section S3.F: Please clarify how we would comply with the third paragraph.

Response 18:

Ecology removed the third paragraph from the section S3.F.

Comment 19:

Page 14 of 38, Section S4.A: BOD loading limit not raised 20 percent per the telephone call from Greg Zentner to Eric Johnson. Also, see provided "Draft Fact Sheet" Page 3.B. A 20 percent increase of 8,882 would be 10,658 lb.

Response 19:

Ecology is temporally allowing the facility to accept a higher influent BOD loading (10,600 lbs/day, an approximately 20 percent increase above the rated capacity) as part of the re-rate study. See Section S4.B of the permit. We did not change the rated capacity (8,882 lbs/day) of the plant as shown in Section S4.A. The rated capacity will change only if Ecology approves a re-rate study.

Ecology did not make any changes to the permit due to this comment.

Comment 20:

Page 14 of 38, Section S4.A: TSS limit increased from 8,882 lb to 11,366 lb. Per "Draft Fact Sheet" Page 3.B the limit was to be raised to 12,000 lb; BUT it also states that this was intended to be a five percent increase over the current design limit. Eight thousand, eight hundred-eighty two (8,882) plus five percent is only 9,326 lb. This needs clarification from Ecology. The phone call cited above stated the 20 percent and five percent increases, but did not state the actual numbers in pounds.

Response 20:

Ecology is temporally allowing the facility to accept a higher influent TSS loading (12,000 lbs/day (approximately a five percent increase above the rated capacity) as part of the re-rate study. See Section S4.B of the permit. We did not change the rated capacity (11,366 lbs/day) of the plant as shown in Section S4.A. The rated capacity will change only if Ecology approves a re-rate study.

Ecology did not make any changes to the permit due to this comment.

Comment 21:

Page 15 of 38, Section S4.B: S&E has reviewed this section for the B&C efforts on re-rating, required reports, and deadlines. We wish to thank Ecology for adding this change to the permit.

Response 21:

Ecology noted the comment. We did not make any changes to the permit due to this comment.

Comment 22:

Page 15 of 38, Section S4.B: 8th paragraph - Change “Provisional” to “Preliminary” (three places in this section) report for the Re-rating Study.

Response 22:

Ecology changed “Provisional” to “Preliminary” in the permit.

Comment 23:

Page 15 of 38, Section S4.B: Last paragraph, 2nd line. After “...After conducting the study...” insert “through the verification period 2009-2012...” the City must prepare and submit a Final Re-rating Study Engineering Report.

Response 23:

Ecology added the language as suggested in the permit.

Comment 24:

Page 16 of 38, Section S4.B: Restates again increased loading permitted for the re-rating study period, with BOD at 10,600 and TSS at 12,000. This needs to be updated per above comments about Section S4.A and the “Draft Fact Sheet” so that the numbers are the same in all three sections.

Response 24:

See response to comments 19 and 20.

Ecology did not make any changes to the permit due to this comment.

Comment 25:

Page 16 of 38, Section S4.E.2: The 2nd sentence should end in a comma and the 3rd sentence becomes a clause in the sentence.

Response 25:

Ecology made the suggested changes in the permit.

Comment 26:

Page 16 of 38, Section S4.E.3: March, not May? We have submitted already for 2009, should this be 2010?

Response 26:

See response to comment # 3.

Comment 27:

Page 16 of 38, Section S4.F: Same as above on report due date. March 15, 2010.

Response 27:

See response to comments # 3.

Comment 28:

Page 22 of 38, Section S6.A.4: Same as above on report due date. March 15, 2010.

Response 28:

Ecology changed the submittal date from “August 15, 2009” to “March 15, 2010.”

Comment 29:

Page 23 of 38, Section S6.A.4.c.vii: This section refers to subsection A.6 which does not exist.

Response 29:

Ecology corrected the typo from “S6.A.6” to “S6.A.5.”

Comment 30:

Page 25 of 38, Section S7: Report due date should be in 2010.

Response 30:

Ecology changed the submittal year from “2009” to “2010.”

Comment 31:

Page 38 of 38, Section G21: Repeats the language of S3.F. Why the duplication?

Response 31:

Ecology removed similar languages from Section S3.F.

Comment 32:

Page 38 of 38, Section G22: Repeats the language of S3.F. Why two places?

Response 32:

Ecology removed similar languages from Section S3.F.

Comment 33:

Page 9 of 38, Section S2.A: Influent and Effluent Sludge. Since sludge from STP-3 is hauled to STP-1 and the sludge is tested at STP-1 there is no need to test the sludge at STP-3 for metals, oil and grease, cyanide and priority pollutants. Also remove the “pH” from “pH priority pollutants” I think this is a typo or please explain.

Response 33:

The NETP serves a residential area with limited (or no) industrial dischargers. In contrast, the Central Treatment plant serves two industrial areas – the Tidelflats and the Nalley Valley. Sampling the two sludges separately can help identify and isolate industrial effects that may compromise sludge quality. As a result, Ecology believes that the city should sample the sludges separately.

Ecology removed “pH” from pretreatment monitoring.

Comment 34:

Page 24 of 38, Section S6.B.3: Oil and grease should not be listed to be run on sludge.

Response 34:

Permit section S6.B.3 states “Oils shall be hexane soluble or equivalent, and should be measured in the influent and effluent only.” There is no requirement to run oil and grease on sludge.

Ecology did not make any changes to the permit due to this comment.

Comment 35:

Page 24 of 38, Section S6.B.1 2nd paragraph: This is inconsistent with S2.A.e but the same sampling.

Response 35:

Ecology re-wrote the footnote “e” in S2.A as below:

“^dSee section S6.B for sampling and analysis of priority pollutants.”

Comment 36:

Page 24 of 38, Section S6.B.1 4th and 5th paragraph: Update to be consistent with S2.B should say 40 CFR part 136 Appendix D (revised 01/01/2008).

Response 36:

Ecology re-wrote the 4th paragraph of Section S6.B.1 as below:

“Wastewater samples must be handled, prepared, and analyzed by GC/MS in accordance with the latest revision of the U.S. EPA Methods 624 and 625.”

Comment 37:

Page 24 of 38, Section S6.B.4: In reference to the last line in that paragraph, who makes this determination?

Response 37:

The Permittee makes the determination. It must use an accredited laboratory and an experienced analyst to make the determination.

Ecology did not make any changes to the permit due to this comment.

Comment 38:

Page 25 of 38, Section S8.B: Out of the last 16 acute bioassays performed over three years 11 had 100 percent survival indicating no toxicity what so ever, three showed 90 percent or greater survival, one 87.5 percent survival and one 57.5 percent survival (July 2006). This clearly indicates that little or no toxicity is present in the effluent from STP-3. The frequency of bi-monthly monitoring is excessive based on the lack of toxicity. We request the frequency of acute bio-monitoring be reduced to annually. The cost of bio-monitoring is excessive when compared to the information gained in the expenditure of resources to collect and deliver samples to the testing laboratory in addition to the cost of sub-contracting to an outside bioassay testing laboratory.

Response 38:

Tacoma NETP complied with the acute whole effluent toxicity (WET) limit. But it failed to meet the performance standard for acute WET testing which triggers the requirement of a limit. The performance standard for acute toxicity is a median of at least 80 percent survival in 100 percent effluent with no single test showing less than 65 percent survival in 100 percent effluent. During the previous permit cycle, three tests out of 28 showed less than 65 percent survival in 100 percent effluent as reported below.

| Date | Percent survival in 100% effluent |
|----------|-----------------------------------|
| 6/25/04 | 40% |
| 11/15/04 | 2.5% |
| 7/12/06 | 57.5% |

A reasonable potential to cause receiving water acute toxicity exists in the NETP effluent. An acute WET limit will remain in the permit in accordance with WAC 173-205-050 (2)(a).

Ecology re-considered the frequency of acute WET monitoring to comply with limit and reduced the frequency from bi-monthly to quarterly (4/year) in this permit.

Comment 39:

Page 28 of 38, Section S9.A: Effluent Characterization was performed with the initiation of the previous permit. That characterization did not indicate the need for a chronic permit limit. Chronic testing done prior to the submittal of the application for renewal of this permit also did not indicate the need for a chronic permit limit. The lack of acute toxicity and the initial characterization and reapplication chronic testing did not indicating the need for a chronic effluent limit. The cost of chronic re-characterization is excessive when compared to the information gained in the expenditure of resources to collect and deliver samples to the testing laboratory in addition to the cost of sub-contracting to an outside Bioassay testing laboratory. We request no additional chronic effluent characterization be required with the exception of the permit reapplication clause.

Response 39:

Effluent characterization during 2004-05 showed Tacoma NETP effluent did not require a chronic WET limit. But NETP failed to meet the performance standard for chronic whole effluent toxicity (WET) in March 2008 testing for the permit renewal application. The performance standard for chronic toxicity is no toxicity in a concentration of effluent representing the edge of the acute mixing zone (2.2 percent).

The March 31, 2008, test showed statistically significant reductions in growth (both biomass and weight) at the ACEC of 2.2 percent effluent. This is not surprising since tests with the same species in July, September, and November of 2004 had very similar effects and came close to failing on more than one occasion at the ACEC. The same test result during effluent characterization would have triggered a chronic WET limit in accordance with WAC 173-205-050(2)(a)(ii).

A reasonable potential to cause receiving water chronic toxicity exists in the NETP effluent. Another effluent characterization for chronic WET is the minimum permit requirement considering WAC 173-205-060(3)(a) – and our normal permit requirement.

Ecology did not make any changes to the permit due to this comment.

Comments on the Draft Fact Sheet:

Comment 40:

Page 3, Section III.B: These limits need to be reflected in the Permit itself in two places listed in the Comments on the Permit. BOD 8882 + 20 percent is 10,658 pounds and TSS 8882 + 5 percent is 9,326 pounds.

Response 40:

See response to comments 19 and 20.

Ecology did not make any changes to the fact sheet due to this comment.

Comment 41:

Page 3, Section III.C: We agree with Ecology on this change.

Response 41:

Ecology noted the comment. We did not make any changes to the fact sheet due to this comment.

Comments from the Citizens for a Healthy Bay:

(Ecology subdivided the letter for different issues (Comment No. 42 through 46) so that we can address all comments/concerns clearly.)

Comment 42:

This letter presents the issues and concerns of Citizens for a Healthy Bay (CHB) subsequent to our review and analysis of the above referenced Draft NPDES Permit. CHB is a community based, non-profit environmental organization working with community stakeholders to cleanup, restore and protect Commencement Bay, the Puyallup River Watershed and surrounding waters and habitats. As such, CHB is an active voice for citizen stakeholders by advocating for the sustainable environmental stewardship within our watershed and Puget Sound.

Based on our analysis of the Draft NPDES permit for the city of Tacoma North End Wastewater Treatment facility, CHB concludes that the permit is not sufficient to protect the health of the receiving waters.

Response 42:

Ecology believes the effluent limitations and conditions set in the permit are protective of water quality standards and human health criteria.

Ecology did not make any changes to the permit due to this comment.

Comment 43:

The Washington State Department of Ecology began to study how nitrogen from a variety of sources affects dissolved oxygen in South Puget Sound as portions of South Puget Sound do not meet Washington State water quality standards for dissolved oxygen. Wastewater treatment

facilities were found to be a significant source of dissolved inorganic nitrogen. Of special note, study results to date indicate that Central Puget Sound sources (sources above the Tacoma Narrows) may influence South Puget Sound water quality.¹

¹Roberts, M., J. Bos, and S. Albertson

South Puget Sound Dissolved Oxygen Study: Interim Data Report
December 2008

Response 43:

Ecology is requiring nutrient monitoring (nitrogen and phosphorus) in influent and effluent through this permit. The objective of this monitoring is to characterize nutrient loading into the treatment plants and evaluate treatment performance. In addition, this will provide valuable data on nutrient loading into the Puget Sound on a continual basis. Ecology is also studying the impacts of nitrogen discharges on dissolved oxygen in the South Sound, and the feasibility of nutrient removal at municipal wastewater treatment plants.

Ecology did not make any changes to the permit due to this comment.

Comment 44:

This permit authorizes the city of Tacoma North End facility to accept the following loadings:

- BOD: 10,600 pounds per day which is 20 percent higher than the approved facility design capacity. This is an increase of 1,718 pounds per day, a 20 percent increase in BOD loading for this facility.
- TSS: 12,000 pounds per day, which is five percent higher than the approved design capacity. This is an increase of 634 pounds per day, a five percent increase in TSS loading for this facility.

While effluent limitations for BOD and TSS are unchanged at 30 mg/L average monthly and 45 mg/L average weekly, not to exceed more than 15 percent of influent concentration, the permit allows for higher amounts of BOD and TSS because of increased permitted loading. We recognize that Ecology does not consider this to be backsliding as the average monthly and weekly limits remain unchanged; however the net consequences to the receiving waters are analogous to an outright increase in effluent limits. Based on the findings of the South Puget Sound Dissolved Oxygen Study Interim Data Report, effluent limits need to be reduced.

Response 44:

Ecology is allowing the Tacoma North End Treatment Plant (NETP) to accept higher loading (BOD and TSS only) above its design criteria based on historical performance - that is, based upon effluent data that shows the City can accept higher loadings and meet its permit limits, pending a study of the plant's capacity ('re-rate study'). We did not increase any effluent limitation (concentration or mass loading) in this permit nor have we authorized an increase in influent loading that would increase effluent discharges. Ecology placed in the permit effluent limits that are protective of water quality standards and human health criteria.

Ecology did not make any changes to the permit due to this comment.

Comment 45:

Technology-based Draft Permit limits of 200 col/100 ml average monthly and 400 col/100 ml average weekly needs to be reduced. The receiving waters are a Class A waterbody and an important salmonid migration corridor. The receiving waters provide important habitat to other fish and aquatic species as well as sea birds and marine mammals and is designated as a fish and wildlife habitat corridor in the city of Tacoma's Critical Areas Ordinances. Additionally, the discharge point is offshore of the Ruston Way esplanade which is Tacoma's largest and most intensely used open space corridor. Recreational activities within the discharge area include recreational boating, fishing and diving. Wading and/or swimming by some is regularly observed during the summer months.

Response 45:

Ecology believes technology based effluent limits for fecal coliform bacteria (200 col/100 mL monthly average and 400 col/100 mL weekly average) are protective of water quality standards. In June 2004, the city of Tacoma undertook a year-long receiving water study² to determine if using the technology-based limits and the ambient conditions around the NETP outfall would be protective of the water quality standards. The results of the study showed that the technology-based limits for fecal coliform were protective of the water quality.

Ecology did not make any changes to the permit due to this comment.

Comment 46:

In addition, CHB's review highlighted several areas of concern and/or inconsistencies in the Draft Permit Fact Sheet that need to be specifically addressed:

- The facility service area is stated to be at the design population of 54,300. Please clarify if the 1990 or 2000 census data was used to determine the service area population of 54,300. As a result of infill development within the service area that has occurred since 1993, Ecology must review the results of the 2010 census to determine if the service area population is within the design population.
- The Draft Permit Fact Sheet states that the facility service area is 100 percent built out however recent land use zoning updates by the city of Tacoma to increase density in the Proctor area as well as the Point Ruston and Commencement developments within the facility service area clearly illustrate that the area is not at 100 percent build out. The Point Ruston development will add 1,000 units, 36 homes, a 150-room hotel, health club, restaurants and retail operations, most of which will come on line while the Draft Permit is in effect. The Commencement condominiums will add an estimated additional 100-150 units. The results of the mixed use zoning for the Proctor District have not been quantified, but based on current building height limit proposals, will be substantial. These developments could result in an additional 10,000 people added to the service area

² Cosmopolitan Engineering Group. 2005. Commencement Bay Fecal Coliform Study.

during the term of the proposed Draft permit. It is evident that the area is not 100 percent built out and that local planning efforts are promoting even greater density and infill within the service area.

These factors emphasize the need for the city of Tacoma to expand the existing facility, re-route waste water from the service area to the Central Wastewater Treatment facility or construct a new facility to handle the additional demand being placed on the North End facility. CHB recognizes the time required for the City to study the available options. However, as the North End facility has already exceeded both its design population and approved facility design capacity combined with the additional load on-going development will place on the facility in the near future, the Draft Permit needs to add the following response remedies during the study period:

- A moratorium on all new hookups within the service area. If a moratorium is not required, all new service must be redirected to the Central Wastewater Treatment facility.
- Requirement that the mixed use zoning for the Proctor District that allows for development and greater density not be made until the existing plant is expanded or a new facility place is constructed.

Thank you for your consideration of our remarks and for adding them to the Draft Permit record.

Response 46:

Ecology took the design population number from the 1994 facilities plan³. We do not track service area population directly. Neither do we track whether a service area is 100 percent built out.

Ecology understands that there are plans for new development in the service area of this treatment plant. While we have temporarily authorized the City to accept higher loadings, this authorization generally reflects the status quo. We have not authorized new loadings, and we have not authorized the City to accept even for study only flows higher than the plant's design capacity: 15.8 MGD (maximum daily flow) and 7.2 MGD (average flow for the maximum month). We expect that the City will have to make improvements at the plant before it can authorize significant new sewer connections.

Ecology routinely monitors the plant's influent loading for comparison with the plant's design capacity. Tacoma NETP has exceeded its design criteria on several occasions but it has not exceeded its effluent limits. This permit requires the City to submit a re-rate study that will determine if there is additional capacity available at the plant based on extensive testing. Ecology will require future treatment plant improvements if additional capacity does not exist.

Ecology uses enforcement actions such as a moratorium on sewer hook-ups when a facility exceeds or has the potential to exceed effluent limits due to facility overloading.

Ecology did not make any changes to the permit due to this comment.

³ Parametrix, Inc. 1994. North End Wastewater Treatment Plant Improvements. City of Tacoma, Washington Engineering Report. Publication No. PMX #21-1564-09.